Appl. No. 09/894,225
Amendment sent May 18, 2005
Response to Final Office Action of February 9, 2005

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-5. (cancelled).

6. (currently amended) A graphics apparatus, comprising:

a rendering system that renders an object in response to a graphics input, the graphics input including object visibility rules, the rendering system constraining the rendering of the object in accordance with the object visibility rules, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, or both,

wherein a rendering system includes a ray tracer, the object visibility rules specifying a relationship between light sources and certain rays, the ray tracer looking up a rule associated with one of the light sources when processing the certain rays for the light source.

7. (original) A graphics apparatus according to claim 6, wherein the certain rays include rays originating from the light source and potentially intersecting the object.

8. (currently amended) A graphics apparatus, comprising:

a rendering system that renders an object in response to a graphics input, the graphics input including object visibility rules, the rendering system constraining the rendering of the object in accordance with the object visibility rules, wherein the object visibility rules allow a graphics designer to control how certain objects or lights, or both, affect the appearance of other objects or lights, or both,

wherein the rendering system includes a ray tracer, the object visibility rules specifying a relationship between the object and certain rays, the ray tracer looking up a rule associated with the object when processing the certain rays for the object, and

10   wherein the ray tracer constructs a ray tree associated with the object in

11   accordance with the object visibility rules.

9-14.   (cancelled).

1   15.   (currently amended) A plug-in application for a modeling system that

2   constructs object visibility rules in response to user input, the object visibility rules being

3   supplied to a rendering system in a graphics input from the modeling system, the rendering

4   system rendering an object in response to the graphics input, the rendering system constraining

5   the rendering of the object in accordance with the object visibility rules, <u>wherein the object</u>

6   <u>visibility rules allow a graphics designer to control how certain objects or lights, or both, affect</u>

7   <u>the appearance of other objects or lights, or both,</u>

8   wherein the rendering system includes a ray tracer, the object visibility rules

9   specifying a relationship between light sources and certain rays, the ray tracer looking up a rule

10   associated with one of the light sources when processing the certain rays for the light source.

1   16.   (original) A plug-in application according to claim 15, wherein the certain

2   rays include rays originating from the light source and potentially intersecting the object.

1   17.   (currently amended)   A plug-in application for a modeling system that

2   constructs object visibility rules in response to user input, the object visibility rules being

3   supplied to a rendering system in a graphics input from the modeling system, the rendering

4   system rendering an object in response to the graphics input, the rendering system constraining

5   the rendering of the object in accordance with the object visibility rules, <u>wherein the object</u>

6   <u>visibility rules allow a graphics designer to control how certain objects or lights, or both, affect</u>

7   <u>the appearance of other objects or lights, or both,</u>

8   wherein the ray tracer constructs a ray tree associated with the object in

9   accordance with the object visibility rules.

18-22. (cancelled).

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1   23.   (currently amended)   A graphics apparatus comprising:

2   a scene server that receives a graphics input specifying a plurality of objects and

3 extracts object visibility ~~information~~ <u>rules</u> from the graphics input; and

4   a ray tracer coupled to the scene server that determines intersections of rays with

5 certain of the plurality of objects included in a scene, the ray tracer receiving the object visibility

6 ~~information~~ <u>rules</u> and constraining the ray intersection determination in accordance therewith,

7 <u>wherein the object visibility rules allow a graphics designer to control how certain objects or</u>

8 <u>lights, or both, affect the appearance of other objects or lights, or both,</u>

9   wherein the ray tracer constructs ray trees associated with the certain objects and

10 the intersections, the ray tracer constraining objects to be included in the ray trees in accordance

11 with the object visibility rules.

         24-26. (cancelled).

1   27.   (previously presented) A graphics apparatus according to claim 23, further

2 comprising a shader coupled to the ray tracer for determining colors associated with the ray trees.

         28-33. (cancelled).

1   34.   (currently amended)   A graphics apparatus comprising:

2   means for receiving a graphics input specifying a plurality of objects;

3   means for extracting object visibility ~~information~~ <u>rules</u> from the graphics input;

4 and

5   means for determining intersections of rays with certain of the plurality of objects

6 in a scene, the determining means including means for receiving the object visibility ~~information~~

7 <u>rules</u> and means for constraining the ray intersection determination in accordance therewith,

8 <u>wherein the object visibility rules allow a graphics designer to control how certain objects or</u>

9 <u>lights, or both, affect the appearance of other objects or lights, or both,</u>

10   wherein the determining means further includes means for constructing ray trees

11   associated with the certain objects and the intersections, the constraining means constraining

12   objects included in the ray trees in accordance with the object visibility rules.

35-37. (cancelled).

1   38.   (previously presented) A graphics apparatus according to claim 34, further

2   comprising means for determining colors associated with the ray trees.

39-43. (cancelled).

1   44.   (previously presented) A graphics method comprising:

2   receiving a graphics input specifying a plurality of objects;

3   extracting object visibility ~~information~~ rules from the graphics input; and

4   determining intersections of rays with certain of the plurality of objects in a scene,

5   the determining step including receiving the object visibility ~~information~~ rules and constraining

6   the ray intersection determination in accordance therewith, wherein the object visibility rules

7   allow a graphics designer to control how certain objects or lights, or both, affect the appearance

8   of other objects or lights, or both,

9   wherein the determining step further includes constructing ray trees associated

10   with the certain objects and the intersections, the constraining step including constraining objects

11   included in the ray trees in accordance with the object visibility rules.

45-47. (cancelled).

1   48.   (previously presented) A graphics apparatus according to claim 44, further

2   comprising determining colors associated with the ray trees.

49-50. (cancelled).